

	8	7	6	5	4	3	2	1
	PROCESS FLOW DIAGRAMS AND P&ID SYMBOLS (GENERAL INSTRUMENT OR FUNCTION SYMBOLS)							
H		VALVE		RUPTURE DISK OR SAFETY HEAD FOR PRESSURE RELIEF		IN-LINE FILTER		SINGLE DUCT VARIABLE VOLUME BOX
		ANGLE VALVE		PILOT LIGHT X=COLOR R=RED G=GREEN		DOUBLE BASKET STRAINER		WING TYPE FACE AND BYPASS DAMPER
G		BUTTERFLY VALVE		FLEX CONNECTION (RUBBER)		HOSE REEL		HW HEATING WATER
		ROTARY VALVE		FLEX CONNECTION (STEEL BRAIDED)		OPEN DRAIN (SHOWN)		DX DIRECT EXPANSION
		3-WAY VALVE		SINGLE PITOT TUBE OR PITOT VENTURI TUBE		XX-- DRAIN SYSTEM ANNOTATIONS DRAIN (PLAN VIEW)		STM STEAM
		4-WAY VALVE		FLOW METER		CLEANOUT (PLAN VIEW)		HCL HEATING COIL
		OS & Y VALVE		FLOW NOZZLE OR VENTURI		SANITARY VENT		CCL COOLING COIL
		DIAPHRAM VALVE		REDUCER		SILENCER/MUFFLER		COLLECTION BIN
		PRESSURE RELIEF		SCREWED CAP		SPACE PENETRATIONS		CYCLONE SEPARATOR
F		DIAPHRAM ACTUATOR		PIPE CAP		FIXED LOUVERS		FLUID RECOVERY PUMP
		TWO-WAY VALVE, FAIL CLOSED		HOSE CONNECTION		TRAP XX ANNOTATES FUNCTION		DUAL SERVICE HEAT EXCHANGER
		TWO-WAY VALVE, FAIL OPEN		FLANGED CONNECTION (PIPING OR EQUIP)		LUBRICATOR		MULTI BLADE DAMPER
		3-WAY VALVE W/DIAPHRAM ACTUATOR		FLOW ORIFICE FIXED		55 GALLON DRUM		SINGLE BLADE DAMPER
		4-WAY VALVE W/DIAPHRAM ACTUATOR		STRAINER WITH VALVE		THERMOSTATIC VENT		MOTOR
		SPRING-OPOSED SINGLE-ACTING ACTUATOR		Y-STRAINER		SPRINKLER ALARM (WATER MOTOR GONG)		TEST PORT
		SPRING-OPOSED DOUBLE-ACTING ACTUATOR		COMPRESSED AIR		FLOW ALARM VALVE		PILOT LIGHT
E		ELECTROHYDRAULIC ACTUATOR		CAPPED AIR DUCT		COOLING TOWER		SEPARATOR
		HAND ACTUATOR OR HANDWHEEL		GATE VALVE (OPEN)		CHILLER		MIST ELIMINATOR
		RESTRICTION ORIFICE IN PROCESS LINE		GATE VALVE (CLOSED)		HORIZONTAL CENTRIFUGAL PUMP		HEPA FILTER
		RESTRICTION ORIFICE DRILLED IN VALVE		GLOBE VALVE (OPEN)		CENTRIFUGAL FAN WITH VARIABLE INLET VANES		CARBON ABSORBER FILTER
		FLOW STRAIGHTENING VANE		GLOBE VALVE (CLOSED)		BLOWER/CENTRIFUGAL FAN		ATMOSPHERIC FILTER
D		DIAPHRAM PRESSURE-BALANCED		NEEDLE VALVE (OPEN)		ROTARY PUMP		SUCCION DIFFUSER
		PRESSURE-REDUCING REGULATOR, SELF-CONTAINED, WITH HANDWHEEL ADJUSTABLE SET POINT		NEEDLE VALVE (CLOSED)		VERTICAL WET PIT PUMP		
		PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP		PLUG VALVE (OPEN)		PROGRESSIVE CAVITY PUMP		
		DIFFERENTIAL-PRESSURE-REDUCING REGULATOR WITH INTERNAL AND EXTERNAL TAPS		PLUG VALVE (CLOSED)		VERTICAL SUMP PUMP		
C		BACKPRESSURE REGULATOR, SELF-CONTAINED		BALL VALVE (OPEN)		HEATER		
		BACKPRESSURE REGULATOR WITH EXTERNAL PRESSURE TAP		BALL VALVE (CLOSED)		HEAT EXCHANGER		
		PRESSURE-REDUCING REGULATOR WITH INTEGRAL OUTLET PRESSURE RELIEF VALVE, AND OPTIONAL PRESSURE INDICATOR		CHECK VALVE		BUBBLE GAUGE		
B		PRESSURE INDICATOR		SPRING CHECK VALVE				
		FLOW DIRECTION		ANGLE VALVE (OPEN)				
		PRESSURE RELIEF OR SAFETY VALVE		ANGLE VALVE (CLOSED)				
		VACUUM RELIEF VALVE		SAFETY OR RELIEF VALVE (INLET PORT SHOWN CLOSED)				
A		PRESSURE RELIEF OR SAFETY VALVE, STRAIGHT-THROUGH PATTERN, SPRING- OR WEIGHT-LOADED, OR WITH INTEGRAL PILOT		THREE-WAY VALVE (CLOSED PORT DARKENED)				
		RUPTURE DISK OR SAFETY HEAD FOR VACUUM RELIEF		FOUR-WAY VALVE (ARROWS INDICATE FLOW DIRECTION)				
				BALL-CHECK VALVE				
				DUAL PURGE VALVE				
				ALARM VALVE				
				AIR INTAKE FILTER				
				ALARM				

**GENERAL NOTES**

- M-0001 IS A STANDARD PIPING AND INSTRUMENTATION DIAGRAM LEGEND SHEET.
- FOR DRAWING TITLE BLOCK CONTENTS REFER TO THE DRAFTING.
- THE SHEET NUMBER IN THE TITLE BLOCK IS A REFERENCE NUMBER FOR THIS MANUAL.

NO	DATE	CLASS	REV	DESCRIPTION	DWN	VER	CHKD	SUB	APP
<b>FACILITY &amp; WASTE OPERATIONS SYSTEMS ENGINEERING &amp; MAINTENANCE</b>									
<b>LEM STANDARD DETAIL MECHANICAL</b>					DRAWN: _____ DESIGN: _____ CHECKED: _____ DATE: _____				
BLDG. XX SUBMITTED: _____					TA-XX APPROVED FOR RELEASE: _____				
PO Box 1663 Los Alamos, New Mexico 87545					SHEET <b>M-0001</b> OF _____				
CLASSIFICATION PROJECT ID: _____		REVIEWER _____		DATE _____		DRAWING NO <b>ST6999</b>		REV <b>0</b>	